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ABSTRACT

In order to determine whether business software packages (word processing, financial management, data management, graphics, statistical, or multi-functional integrated software packages with business applications) are effective tools for public service professionals (educators and government workers) when applied directly to individuals' daily information needs, a Priamidal Training Model was designed for teaching computer literacy and software use to adults with limited science-math training in the Minnesota Department of Public Welfare. The model assisted each individual learner in the completion of tutorials available in software manuals for one software package of the learner's choice, and also in the development of a small computerized project directly applicable to the individual's job. It was found that the training provided improved quality of work for each individual, individual time savings, increased individual self-esteem, improved peer status, increased job satisfaction, and increased departmental involvement in computerization, which resulted in increased productivity. This paper briefly describes the project and presents a list of software applications developed by the novice computer users, sample products of these applications, and a list of possible business software applications for educational management. (ESR)

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EDUCATIONAL MANAGEMENT THROUGH MICROCOMPUTER SOFTWARE

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January 22, 1984

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EDUCATIONAL MANAGEMENT THROUGH MICROCOMPUTER SOFTWARE

ABSTRACT:

Microcomputer software designed for business environments are effective tools for public service professionals when appropriate adult training techniques and peer support are available. Development of individualized applications (small projects of importance to each learner) provide a.) improved quality of work for each individual b.) increased self-esteem for each individual, c.) improved peer status d.) increased time for each individual, e.) increased job satisfaction, and f.) increased departmental involvement in computerization resulting in increased productivity of an entire department.

HYPOTHESIS:

Business software packages (*) are effective tools for public service professionals (educators and government workers) when applied directly to the individuals daily information needs.

BACKGROUND:

The Minnesota Department of Public Welfare became involved in microcomputer training early in 1983 when the Staff Development Office initiated computer feasibility study and resulting computer literacy courses designed for non-technical adults. Basic knowledge of computer terminology, and direct application of computer skills to individual's jobs were priority components of the first computer literacy courses.

The Department of Public Welfare was in a situation familar to many education institutions having limited resources for a major project. The population was large (4,000-12,00 depending upon the definition of the population) and disbursed across the entire state of Minnesota. The population had widely divergent educational and insititutional needs and values. The one common factor seemed to be a desparate desire for immediate information on and access to computers. The need for computer literacy training was acute and highly valued by employees. Results needed to be visible within one year.

MANAGEMENT TRAINING THROUGH BUSINESS SOFTWARE:

This was not a high budget project and, in fact, was considered a limited pilot project. The limits are the same ones found in education - lack of resources. One microcomputer was purchased for training purposes and funded for 3-4 software packages with one full-time person as trainer. Auxillary funds were further limited by a state spending freeze.

(*) Business applications software means software designed for and used by business running the gamut of word processing, financial managment, data management, graphics, statistics, and multi-function (integrated) packages in a variety of brands. Brands mentioned are those used by the author and are not to be considered an endorsement or preference.

Management of people and resources varies mostly in details; it is essentially the same in business, small business, education, and government service. Therefore, many of the applications developed by employees of the Minnesota Department of Public Welfare will be of interest to educators, especially special educators since many aspects of special education and welfare overlap.

Training was designed to meet the highly individualized needs of adults with limit science-math training. That is, the Priamidal Training Model was designed to supporting individualization to the point of assisting each individual learner to complete tutorials available in the software manual for the one software package of the individual learner's choice (ie: wordprocessing, financial management, or data managment) and, then to apply that training directly to development of "applications" (small projects directly applicable to the individuals job). The results have been both surprising and rewarding. The support for computer literacy and for novice computer users grows daily due in part to the immediacy of results for individuals. Continued sucess depends on mutual peer support.

RESULTS OF TRAINING THROUGH BUSINESS SOFTWARE:

Results of the computer literacy courses and the Priamidal Training Model appear in two basic categories: learners' results and trainer's results.

First the learners' results:

a.) improved quality of work in each individuals position,

b.) increased time for each individual,

c.) improved peer status

d.) increased job satisfaction, and

e.) increased departmental involvement in computerization resulting in increased productivity of entire departments.

The results noticed by the author-trainer were

a.) increased class size,

b.) increased sophistication of learners,

c.) increased and then after 6 months decreased use of training computers and trainer's time in individualized learning situations, and

d.) validation of the Primidal Training Model intended for use by the state hospitals and counties agencies where direct supervision of learners is impossible.

The breadth of "applications" developed by beginning computer users (ie: users having less than 30 hours of microcomputer experience) proves that beginers do know what they want a software package and microcomputer to do for them and that beginners are capable of producing useful tools for themselves. These "applications" should also spark some creative thought in educators on how they might manipulate these same software packages toward usefulness in education management.

APPLICATIONS BY DEPARTMENT OF PUBLIC WELFARE EMPLOYEES

Word Processors:

- form letters
- memos
- Figure 1 newsletters
- pamphlets
- papers
- reports
- grant purposals

Financial Management (The Calcs):

- monthly(quarterly) budgets
- Figure 2 project plan (similar to a Curriculum Master Plan)
- Figure 3 floor plans
- trainer statistics
- state-wide mental illness program statistics
- Figure 4 mileage payment charts
- reimbursement charts
- cost-of-move prediction statistics
- timeline for moving units (project plan for move)
- Figure 5 flowcharts

Data Management (data bases):

- contract management
- Figure 6 statistical collections & reports
- keyword indexes (task force participants/CAI design specialist interests/ CAI review teams/ CAI development teams)
- vendor lists
- Figure 7 trainee records
- resource list: keyword index on articles
- negotiations charts for personnel management with multiple unions personnel

The applications listed above have been developed by novice computer users, individuals with less than 30 hours of experience and no technical training under the supervision and with the suppo of the Staff Development Office of the Minnesota Department of Public lfare.

SUGGESTED APPLICATIONS FOR EDUCATIONAL MANAGERS:

It is effective management and effiencent use of time apply those tools already developed to the job at hand. Utilization of business software may incidentally free-up time for programming where certain aspects of education are sufficiently unique to require new programs. However, much of the routine work of schools can be fit into business molds. Business packages have as much to offer educators as they have offered Department of Public Welfare Employees.

These suggestions come from the author's list of suggestions to state hospitals and county social service (welfare) agencies which have not yet been applied but have been discussed and determined appropriate. Many of these suggestions have been donated by educator friends and individuals in the Minnesota Department of Public Welfare who have backgrounds and experience in special education.

APPLICATIONS FOR EDUCATIONAL MANAGEMENT

Word Processors:

antedotal records
press releases
curriculum:
    lesson plans
    outlines
    flowcharts
worksheets specially designed for the special education child (special print fonts suggested- large, bold lettering)
design manuals: program description manual for parents or new educators /orientation manuals
reports: news releases/ committee reports/ Child Study Team reports/ teacher education reports

Financial Managers (the Calcs):

Curriculum Master Plan
Building Acquistion Plan
grant tracking
projected/estimated expenditures
Individual Education Plan (IEPs)
budget reports to board
budget requests projected costs and benefits for negotiations
milk money collection

Data Managers:

keyword indexes for:
substitute teachers
staff skills (ie: hobbies, special interest, trips, classes taken, etc.)
repair lists include reg. repair company, phone #, emergency number, prices, contract numbers, etc.
supplies inventories:art/physical education/music/multi-media/office supplies

Multi-function Packages (ie: those software packages which include more than one of the above; often includes graphics capability.):

Presentations (ie: to board on expenditures using graphs to demonstrate expenses, income, tax bases, grants, student:teacher ratios, etc.)
Grant purposals where budgeting for and implementing grant requires figures, plus data on district resources, needs assessments, personnel, student:teachers statistics, etc mixed into written document with high revision frequencies.
Tracking building projects(ie:data bases on materials and vendors mixed with budgets, timelines, and typed documents from the orginal purposal to bid specifications to correspondence with vendors, contractors and lawyers correspondence. Visuals available through graphics to graphically demonstrate effects of overruns.)

Other packages to consider:

Electronic Mail (dedicated computer in office)
. an electronic suggestion box
. a school/district bulletin board

Time Management/Date Books
. scheduling meetings made easy (very useful with Child Study Team meetings where schedules for 3 or more people must be coordinated).
. reminders of due dates for reports and activities (ie: Dec 16- 12:30 Staff Christmas Party
- 2:00 Early Dismissal- gym uniforms home & laundered.
. track student latenesses/leave/make-up work

Project Management
. track building projects
. IEP's
. grant and purposal tracking

Microcomputer software designed for business environments are effective time and work saving tools for public service professionals when appropriate adult training techniques and peer support are available and when both tools and training applied directly to the individuals daily information needs. Development of small projects of importance to each learner called "applications" provide a.) improved quality of work for each individual b.) increased self-esteem for each individual, c.) improved peer status d.) increased time for each individual, e.) increased job satisfaction, and f.) increased departmental involvement in computerization resulting in increased productivity of whole departments.

Figure 1: Newsletter from WordStar by MicroPro

H A P P Y H O L I D A Y S

This season holds two holidays for state employees. Enjoy your vacations on December 26 and January 2.

Gym & Tonic will present two workshops in Room A. December 10 will be another stress managment movie at noon. This one is a management by laughter session, a Three Stoges . Weight Loss Support Group will meet Monday, Dec 10 at 11:30 in Room C.

TRAINING ANNOUNCEMENTS

Staff Development courses for winter quarter have been announced. Check with your supervisor for the Bulletin with class titles, dates, and times. Registration forms may be picked up at the Staff Development Office or at Personnel.

DOER Training announcements have been posted on Offical Bulletin Boards. DOER registration forms may also be picked up in Staff Development or Personnel.

Financial Management has sent out change of address and change of status forms for reporting W-2 information. Please return yours before December 31, 1983. This will speed up the W-2 delivery process and allow everyone to do their tax return early.

EARLY RETURNS = EARLY REFUNDS

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Figure 2:Project Plan from SuperCalc by Scorcim

MASTER PLAN:COMPUTER ASSISTED TRAINING PROJECT
STAFF DEVELOPMENT - DEPARTMENT OF PUBLIC WELFARE
TASKS AND ACHIEVEMENT INDICATORS

TASKS	INDICATORS OF TASK ACHIEVEMENT	TARGET DATE	PERSONNEL RESPONSIBLE	COMPLETION INDICATOR	COMPLETION DATE	COST TO SDD	OTHER UNIT BEARING COST	COST TO UNIT	TOTAL COST DPW	0
(1) Determine the current status of DPW computer usage and computer training needs.	1.1 Determine number of microcomputer users and numbers of microcomputers in current use.	DEC/82	[CA] Project Team: Pete Aupe-SDD Ed Thom-ISD G.W. Patterson	Mem:Asst. Comm. ISD						
	1.2 Determine available resources for computer based training.	DEC/82	ISD							
	1.3 Determine number of trainees enrolled in computer related courses & number of potential trainees and computer users.	DEC/82								
	1.5 Analyse & project resources, training resources & courses, etc. required to meet projected training needs.	JAN/83								
	1.6 Purchase resources (ie:microcomputers, mini or mainframe, consultant, etc.)									
	1.7 Evaluate computer use:recommend changes	MAR/84 MAR/85 MAR/86 MAR/87	alg alg alg	Recommendations made to Pete Aupe, ISD, ISD, etc.						
	1.8 Project, budget for, and implement changes in hardware, software, and other pertinent resources.	MAR/84 MAR/85 MAR/86 MAR/87		Recommendations reflected in budget. PO: processed,implement modification,eval.& reference.Memo(1.7)						
SUBTOTAL OF COSTS										
(2) Provide initial training and resources	2.1 Determine and purchase required software	JAN/83	alg	Software purchased & running	MAR/83					
	2.2 Set priorities for initiation of courses determined in 1.5 (ie: literacy, management, technical training, awareness,etc)	MAR/83	alg	Course piloted & continuing.	MAY/83					

Figure 3:Floor Plan from SuperCalc2 by Scorcim

D-44	Computers	
D-52	Corey,Ralph	6-2996
D-45	Darling,Jon	6-5733
D-10	Dold,Bert	6-6795
D-43	Donahue,Linda	6-6633
D-19	Eberhart,Joe	7-2496
D-4	Erickson,Dennis	6-6635
D-3	Etkin,Jerry	6-4416
D-35	Fecht,Charles L.	6-2373
D-27	Ferguson,Edwin L.	6-3763
D-38	Finke,Dale A.	6-6853
D-8	Gaylord,Patricia	6-1551
D-2	Giberson,Francis E.	6-6993
D-42	Gomez,Maria R.	6-2724
D-32	Hassel,Bonita	7-3548
D-39	Harris,Melvin J.	6-6193
D-34	Haselhuhn,Gary W.	6-2673
D-12	Hedsan,Everett	6-2223
D-24	Heinecke,Charles	6-4618
D-55	Houlston,Michael	6-1445
D-9	Juliar,Donovan	6-3821
D-42	Lang,Ronald	6-3869
D-1	Levine,Leonard M.	6-2701
D-28	Lindberg,Duaine R.	6-6743
D-11	Martin,Webster C.	6-2384
D-31	Nasa,Dwight P.	7-3638
D-5	Moriarty,Francis	7-2171
D-50	Oman,Phil	6-2788
D-22	Peek,Roland M.	6-5698
D-29	Peterson,J. Phillip	6-3978
D-21	Pierre,Elsor	6-4439
D-18	Sandberg,Margaret	7-4284
D-23	Sarazin,James(Terry)	6-2719
D-7	Schumacher,Wanda	7-3538
D-49	Small,Chuck	6-2918
D-47	Somers,Ken	6-4835
D-59	Soucek,Bonita B.	6-3518
D-41	Steiner,Leo M.	6-4898
D-45	Stone,Chuck	6-2945
D-58	Suncoust,Barbara L.	6-8867
D-51	Suncoust,Shirley	7-2383

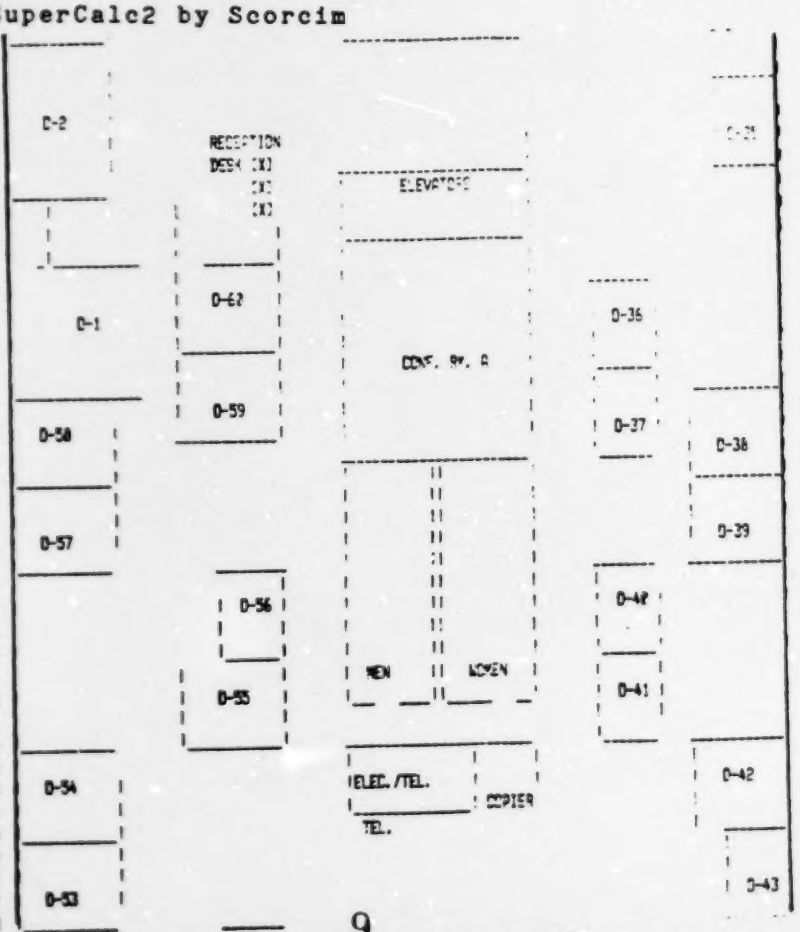

Figure 4:Mileage Payments from SuperCalc2 by Scorcim

COMPARISON OF COST BETWEEN USE
OF
PERSONAL CAR AND STATE OWNED CAR

Miles Per Month	PERSONAL CAR Reimbursement Rate .21	.26	.27	*STATE CAR Subcompact	Compact	Intermediate
202	42.00	52.00	54.00	139.00	143.50	150.00
233	48.93	60.58	62.91	141.15	145.89	152.97
266	55.86	69.16	71.82	143.29	148.29	155.94
299	62.79	77.74	80.73	145.44	150.68	158.91
332	69.72	86.32	89.64	147.58	153.07	161.88
365	76.65	94.90	98.55	149.73	155.46	164.85
398	83.58	103.48	107.46	151.87	157.86	167.82
431	90.51	112.05	116.37	154.02	160.25	170.79
464	97.44	120.64	125.28	156.16	162.64	173.76
497	104.37	129.22	134.19	158.31	165.03	176.73
532	111.30	137.80	143.10	160.45	167.43	179.70
563	118.23	146.38	152.01	162.60	169.82	183.67
596	125.16	154.96	160.92	164.74	172.21	185.64
629	132.09	163.54	169.83	166.89	174.60	188.61
662	139.02	172.12	178.74	169.03	177.00	191.58
695	145.95		187.65	171.18	179.39	194.55
728			196.56	173.32		197.52

Figure 5:Flow Chart from SuperCalc by Scorcim

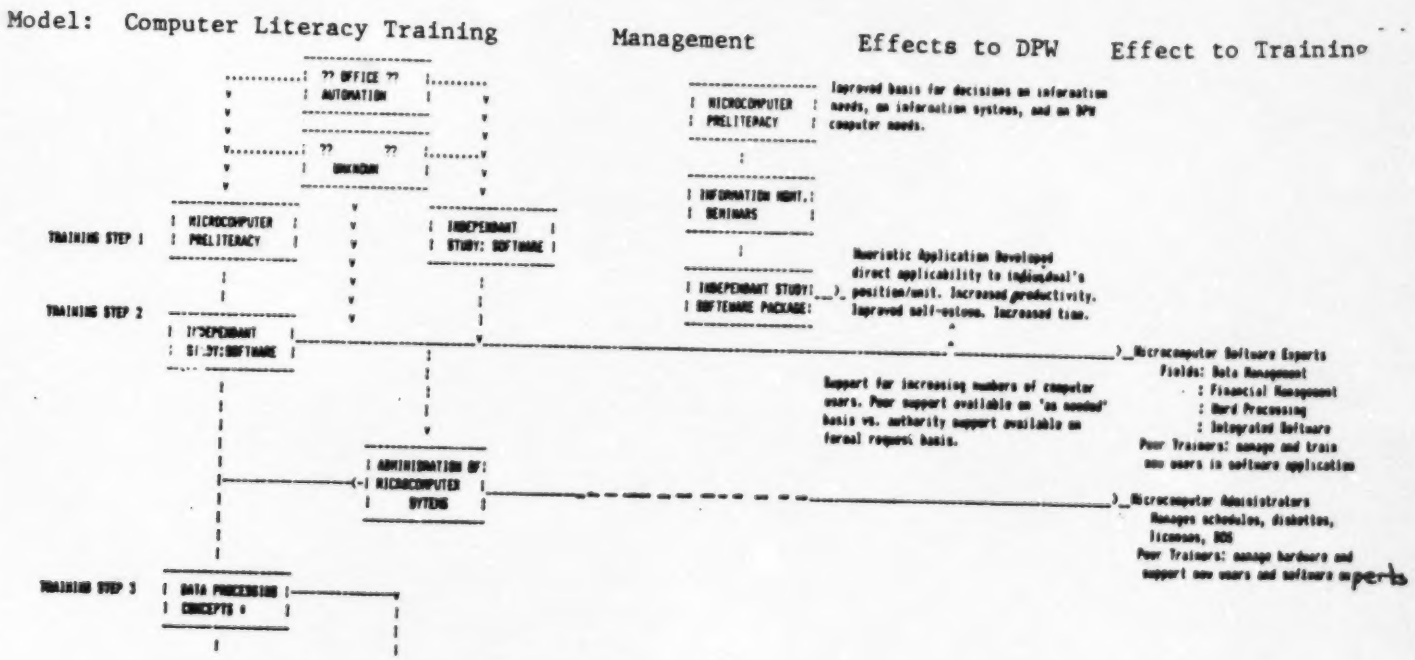
Model: Computer Literacy Training
Management
Effects to DPW
Effect to Training
?? OFFICE ?? AUTOMATION
?? ?? UNKNOWN
MICROCOMPUTER PRELITERACY
INDEPENDANT STUDY: SOFTWARE
TRAINING STEP 1
TRAINING STEP 2
TRAINING STEP 3
DATA PROCESSING CONCEPTS
ADMINISTRATION OF MICROCOMPUTER SYSTEMS
MICROCOMPUTER PRELITERACY
INFORMATION MGMT. SEMINARS
INDEPENDANT STUDY: SOFTWARE PACKAGE
Improved basis for decisions on information needs, on information systems, and on DPW computer needs.
Heuristic Application Developed direct applicability to individual's position/unit. Increased productivity. Improved self-esteem. Increased time.
Support for increasing numbers of computer users. Poor support available on 'as needed' basis vs. authority support available on formal request basis.
Microcomputer Software Experts
Fields: Data Management
: Financial Management
: Word Processing
: Integrated Software
Poor Trainers: manage and train new users in software application
Microcomputer Administrators
Manages schedules, distribution, licenses, MOS
Poor Trainers: manage hardware and support new users and software experts

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Figure 6: Statistical Collections And Reports (ex:DAC Social Worker Data) from DBase II by Ashton-Tate

SOCIAL WORKER REPORT: ALL SERVICE COSTS- ALL CLIENTS

CLIENT	CITY	PROG	COST	SOC. WORKER
ANDERSON, A	DULUTH	DAC	35.09	RICK H.
ANDERSON, F	ST.PAUL	SILS	20.00	ROX A.
DAVIS, R	ELK RIVER	SHWK	10.00	RICK H.
DONALDSON,M	DULUTH	DAC	66.66	RICK H.
JOHNSON, T	ELK RIVER	DAC	35.09	RICK H.
OLSON, D	MINNEAPOLIS	DAC	40.00	GARY F.
OLSON, S	MINNEAPOLIS	SHWK	35.09	GARY F.
TOTAL			277.02	

SOCIAL WORKER REPORT: DAC COSTS ONLY

CLIENT	CITY	PROG	COST	SOC. WORKER
ANDERSON, A	DULUTH	DAC	35.09	RICK H.
DONALDSON,M	DULUTH	DAC	66.66	RICK H.
JOHNSON, T	ELK RIVER	DAC	35.09	RICK H.
OLSON, D	MINNEAPOLIS	DAC	40.00	GARY F.
TOTAL			176.74	

Figure 7: Trainee Records from DBase II by Ashton-Tate

STRUCTURE OF FILE: BECKYM.DBF

FLD	NAME	TYPE	WIDTH
001	NAMES	C	020
002	JOB:UNIT	C	006
003	CLASS	N	003
004	TITLE	C	020
005	CREDIT	N	002
006	DATE	C	008
007	COMPLETE	L	001

EMPLOYEE CLASS ATTENDANCE RECORDS BY NAME

EMPLOYEE	CLASS #	CREDITS HOURS	COMPLETED (T/F)
ADAMS, HARRY	123	0	.F.
ADAMS, HARRY	200	25	.T.
JONES, MARY	123	4	.T.
RICHARDS, ANNE	123	4	.T.
RICHARDS, ANNE	505	12	.F.
*TOTAL		45	